CURRENT ISSUE: CHALLNGES IN ADULT LEARNING USING TECHNOLOGY

Sonja L. Howell

Abstract

This annotated biography combines studies defining what challenges adult education faces with technology. Even though most studies discuss technology issues, there are not many that discuss behavioral or mental changes that may need to happen when adult learning uses technology in instruction. This study asked the question, *"What technology challenges are faced by learners and instructors during adult education*?" The paper shares what multiple educators and learners have compiled within 13 journal articles. The variables across platforms of data collection, qualitative and observations determine there is not enough consistent data to compare the sources. Instead we have the option to create a list of challenges found throughout the different studies.

Keywords: Technology acceptance model TAM, Mobile learning, Systematic literature review, Elementary education Secondary education Pedagogical issues Teaching/learning strategies Improving classroom teaching, Distance education and telelearning, Distributed learning environments, Online instruction, Distance learning, Adult learning, Smartphones, Human capital, Enrollment rates, Investment, Poverty, Digitized economy, Technology adoption, Personal computers, Internet, Education, Instrumental variable, Technology, Professional development, Teachers, Meta-analysis, Teacher education, Technology acceptance model (TAM), Technology adoption, Andragogy, Computer-assisted instruction, Critical reflection, Information communication technology, Transformative learning

Overview Educational Technology for Teachers and Adults in Education

This research explains how data is not consistent, how data was compiled and a list of challenges adult learners and instructors face during adult learning programs. It is important for educators to understand adult learning practices and needs when teaching. Some of the challenges are the technology, the employers' technology support while other challenges are challenges with the teacher and some challenges are even with the student. Claims that some of the issues are a lack of something while other claims are behavioral, or belief sets that need change.

Theoretical Framework

The Transformative Learning Theory, Tinto's Theory of Persistence, and the Technology Acceptance Model (TAM) were three of the methods used in the studies to find what the technological challenges are for adults in education. When used together in this collection of studies, the models represent an overall well-rounded set of techniques.

Transformative Learning Theory

The transformative learning theory was first introduced by Mezirow (1978) in 1975 for use with adult education. The theory was for adults who need to change their behaviors. It was noticed that adults have a learned behavior or "frames of reference" (p. 16) from knowledge built from the person's experiences that may need to change, but first they would need to know what the behavior is, what they want it to be, and how to change it. The process in short was documented by Wang & King (2006) as Affective reflectivity, Discriminant reflectivity, Judgmental reflectivity, Conceptual reflectivity, Psychic reflectivity, and Theoretical reflectivity. It included a process of self-reflection and critical reflection (Dirkx, 2001), to change what they had been taught and to use a new method of directional thinking. The adult learner would have to learn to be aware of their inner self and how they are able to change their perceived perception of

their past experiences and be open to asking important questions to make changes. The goal was

to work on the social skills of a person within their persona and their own social community

(Wang, Torrisi-Steele, and Reinsfield, 2020).

If you bring this theory to the current social times, the educator using these references

and theories to help adults would be an advocate. This educator would need to help shift the

adult learner in a way to accept current social trends, needs and positive thoughts helping them

relearn norms. (Wang, Torrisi-Steele, and Reinsfield, 2020).

Tinto's Theory of Persistence

Tinto's Theory of Doctoral Student Persistence from (1993) includes community

involvement for full time students. This theory believes that the completion of a PhD depends on

a solid relationship between the student and administration of the community at the school. If

there is a strong bond between instructors and the student or even the perceived community, the

student will stay involved and complete their efforts successfully (Zahl, 2015). Students feel they

matter more when they have relationships and connections during challenging times while they

are attending their PhD program (Tinto, 1993). The community is important due to the student

spending time with a collective group for a large amount of time during the days during lessons

(Tinto, 1993). Engagement and production were up for students who communicated and became

integrated in the environment equally with both peers, academic department, supportive

environment, instructors, and professionals in the field (Tinto, 1993).

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is mentioned as a "model/theory" (Al-Emran,

Mezhuyev and Kamaludin, 2018), and is used most widely (King & He, 2006), was created by

Davis in 1989. Information System (IS) is a highly researched topic needing to find supported

data prior to follow through due to the expense of the technology. The TAM model evolves as

technology involves, for example adding the studies of M Learning in 2018 (Al-Emran, Mezhuyev and Kamaludin, 2018). The TAM studies are used over a period to show a pattern and used methods from other theories to show acceptance.

<div align="center">**Literature Review**</div>

The literature compiled in this study shares variables that may cause challenges in adult education. Some say teachers are the problem. Some find the students are the problem. Many point fingers of fault at the technology and say that is the problem. In this report, we find it may be a mix of all three leading to confusion and frustration. These problems can be modified for higher achievements.

Technology

Some adults have expressed greatly that they want to use technology, including mobile devices as an instructional platform and the attraction from adult learners to use technology in the classroom continues to grow each year (Al-Emran, Mezhuyev and Kamaludin, 2018). A digitized economy needs highly developed capitol where adult education is more attractive and rewarding, (Josan 2019). It has been recognized that teachers act as motivators to their adult learners (Wang, Torrisi-Steele, and Reinsfield, 2020), and the use of technology in the classroom increases effectiveness of instruction, assists to connect to students, increases efficiency and complies with the standard norm, (Voet and De Wever, 2017).

Teachers

This report also shows that teachers need to have a better understanding for how students learn, (Börner, Rouse, Trunfio and Stanley, 2018). The technology needs to be aligned with reasoning and practice without teacher bias on how they believe or do not believe technology fits in the classroom (Heitink et al., 2016). Tondeur, van Braak, Ertmer and Ottenbreit-Leftwich (2016) found that teachers need to move or reinvent their instruction as they recreate their

curriculum from teacher-centered to student-centered instruction. Henrie, Halverson and Graham (2015) reminds us that the success of students shows us proof of successful instruction. Professional development advancement was reported to need improvement for adult education in the subjects of meaningful use of technology (Tondeur, van Braak, Ertmer and Ottenbreit-Leftwich, 2016), technology skills training should be provided for all instructors on technology provided to them in their classrooms (Voet and De Wever, 2017) and that rigor should not suffer from lack of evolutionary technology (Lawless and Pellegrino, 2016).

Students

Adult learners regularly need to "upskill" for employment (Börner, Rouse, Trunfio and Stanley, 2018) even if they have reservations, lack of sills, are afraid to use, see technology as negative and need to transform their behaviors or perspectives of using technology (Wang, Torrisi-Steele, and Reinsfield, 2020). Some adult learners have challenges of not having the technology or internet (Inverso, Kobrin and Hashmi, 2017). Other adult learners simply don't know how to use technology since they have not been to school and the longer you attend school or more recently have attended classes, the more up to date you are on current technologies (Kämpfen and Maurer, 2018). Rosen and Vanek, (2017) reported that adult learners could learn technology basics in which Henrie, Halverson and Graham (2015) says improves engagement and they can become successful students. Unfortunately, no cost educational materials for adults to learn technology basics are limited (Rosen and Vanek, 2017)

Limits

Limits mentioned include debates over how to measure low-level vs. high-level technology usage (Voet and De Wever, 2017), terminology meaning of "educational change" (Tondeur, van Braak, Ertmer and Ottenbreit-Leftwich, 2016) or consistent definitions of "engagement" (Henrie, Halverson and Graham, 2015). Lawless and Pellegrino, (2016) states a universal feedback approach is needed. Josan,

(2019) confirms current analysis limits itself. Observation for adult education is often overlooked (Inverso, Kobrin and Hashmi, 2017). Some research shows that data found is limited to single views and observations of teachers who have an appreciation for technology (Heitink et al., 2016), but it is better to involve the teachers and the community with qualitative responses than only quantitative data (Tondeur, van Braak, Ertmer and Ottenbreit-Leftwich, 2016).

Summary

The report documents different studies pertaining equally to teachers, adult learners and technologies which have their highs and lows when it comes to challenges. Each article reviewed have their own unique purpose, design and method, research questions, setting, number of participants, sample types, data collection methods, data analysis procedures making it difficult to find a complete list of valid results. Within the articles the data analysis, observations, interviews, questionnaires, focus groups and surveys all found inconsistencies. The data showed that the reports have limitations and recommendations for continued research to help understand challenges surrounding technology in learning in the adult education setting.

Conclusion

The research gap that needs to be addressed based on this literature review (Spaulding & Rockinson-Szapkiw, 2014) would be to study more on behavioral changes such as intrinsic motivation needed for adults to learn in order to be resilient throughout all of the challenges with technology. Although, I found documentation adult instruction using technology none of them mentioned intrinsic motivation. Other More valid and balanced research is needed to determine the challenges with technology in adult learning (Al-Emran, Mezhuyev and Kamaludin, 2018) The TAM model fits the data needs for pre- and in-service instructors, yet a considerable amount of data is missing. (Scherer, Siddiq and Tondeur, 2019) At this time we cannot report a complete list of challenges. We can report that further research is worth the investment (Inverso, Kobrin and Hashmi, 2017).

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